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(54) METHOD OF PRODUCING SODIUM CALCIUM SILICATE

The invention relates to the production of sodium calcium silicate and may be used for making special-purpose optical glasses.

A method is known for producing sodium calcium silicate, for use in glass-making, which includes the reaction of sodium metasilicate, calcium metasilicate

A disadvantage of the known method is the low degree of purity of the desired product and the complexity of the technological process.

The object of the invention is to simplify the process and to increase the

degree of purity of the desired product.

The stated object is achieved in that a solution of sodium silicate and calcium hydrosilicate with the composition $\text{CaO} \cdot 3\text{SiO}_2 \cdot x4\text{H}_2\text{O}$ are reacted, this being performed at 70-95°C over 1-2 h.

Silicate with the formula $\text{CaO} \cdot 3\text{SiO}_2 \cdot x4\text{H}_2\text{O}$ is obtained by a known method.

The method is performed in the following manner.

A solution of sodium silicate and calcium hydrosilicate with the composition $\text{CaO} \cdot 3\text{SiO}_2 \cdot x4\text{H}_2\text{O}$ is stirred in a reactor for 1-2 h. The resultant suspension is then dried at 200-220°C to a moisture content of 2-4 wt.% in the desired product.

Example. In order to produce 1 kg of sodium calcium silicate (composition), 6.55 litres of a solution of sodium silicate $\text{SiO}_2/\text{Na}_2\text{O} = 3.0$ (concentration of $\text{Na}_2\text{O} = 30 \text{ g/l}$, of $\text{SiO}_2 = 90 \text{ g/l}$) are charged into a reaction vessel with a stirrer, and 275 g of $\text{CaO} \cdot 3\text{SiO}_2 \cdot x4\text{H}_2\text{O}$ are added with continuous stirring, with subsequent dewatering at 95°C for 2 h. The resultant viscous mixture is then dried in a quartz dish at 220°C to a moisture content of 2-4 wt.% in the product.

The sodium calcium silicate contains contaminants at the level of $1 \cdot 10^{-4}$ wt.%,

Claims

1. Method of producing sodium calcium silicate, for use in glass-making, including reaction of a silica-containing compound and calcium silicate while heating, with subsequent drying of the resultant product, characterized in that, with the object of simplifying the process and increasing the degree of purity of the sodium calcium silicate, a solution of sodium silicate and calcium hydrosilicate with the composition $\text{CaO} \cdot 3\text{SiO}_2 \cdot 4\text{H}_2\text{O}$ are reacted

2. Method according to Claim 1, characterized in that the reaction is performed at a temperature of 70-95°C for 1-2 h.

Sources of information considered in the examination

1. USSR Inventor's Certificate No. 147585, cl. C 01 B 33/32, 1961.

2. USSR Inventor's Certificate in respect of Application No. 2648077/26, cl. C 01 B 33/32, 1978.